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AN ISO 9001 : 2008 COMPANY &NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005
4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2019-07-06-24** **Date: 16-03-2019**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilets and Septage Maintenance in Ward No.03.
Agency	:	Sri.S.Somashekar, #90, New, No.441/15, Allasandra, GKVK Layout, Bangalore-560065.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/107/18-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	13-03-2019
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	14-03-2019
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.10%	_
2	Finess by Air permeablity method (m^2/kg,Min)	281.7	225m^2/kg, Min
3	Density (gm/cc)	3.11	_
4	Standard Consistency (%)	29.0%	Not specified
5	Initial Setting time	190 minutes	Not less than 30 minutes
6	Final Setting time	295 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.0mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Samples will be disposed after 90 days from the date of issue of test certificate

FOR CIVIL Pro.

Executive Engineer
Project Division
Yelahanka Zone
Bangalore

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL PRO Sig..... Date..... BANGALORE

****End of Report****

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Date: 11-04-2019

Lab ID	:	**CP-2019-07-06-24**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilets and Septage Maintenance in Ward No.03.
Agency	:	Sri.S.Somashekar, #90, New, No.441/15, Allasandra, GKVK Layout, Bangalore-560065.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/107/18-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	13-03-2019
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	14-03-2019
Environmental Conditions during test	:	Temperature: 26˚C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	29.0N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	57.0N/mm^2	Not less than 53 N/mm^2

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Project Division
Yelahanka Zone
Bangalore

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R KARTHIK RECHAN
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Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2019-07-06-24**	**Date: 16-03-2019**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.	
Address	:	Project Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to General Public Toilets and Septage Maintenance in Ward No.03.	
Agency	:	Sri.S.Somashekar, #90, New, No.441/15, Allasandra, GKVK Layout, Bangalore-560065.	
Customer's Reference	:	EE(Project)/Ynk Zone/WO/107/18-19	
Source of Sample	:	Sample supplied by Agency	
Sample condition	:	Satisfactory	
Date of Receipt	:	13-03-2019	
Sample Type	:	40mm down size coarse aggregate	
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties	
Date of test	:	13-03-2019	

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	1202	1202	8.0	92.0	90-100
3	20 mm	5339	6541	43.6	56.4	30-70
4	10 mm	6241	12782	85.2	14.8	10-35
5	4.75 mm	1632	14414	96.1	3.9	0-5
6	Pan	586	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2019-07-06-24** **Date: 16-03-2019**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.3	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11	
3	Specific Gravity	2.61	_
4	Bulk Density(Loose) (Kg/l)	1.49	_
5	Bulk Density(Compacted) (Kg/l)	1.54	_
6	Water Absorption(%)	0.2	_

Note:

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Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2019-07-06-24** **Date: 15-03-2019**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilets and Septage Maintenance in Ward No.03.
Agency	:	Sri.S.Somashekar, #90, New, No.441/15, Allasandra, GKVK Layout, Bangalore-560065.
Customer Reference	:	EE(Project)/Ynk Zone/WO/107/18-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	13-03-2019
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	13-03-2019

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	210	210	4.2	95.8	90-100
3	10 mm	2840	3050	61.0	39.0	25-55
4	4.75 mm	1740	4790	95.8	4.2	0-10
5	Pan	210	5000	100	0	_

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2019-07-06-24** **Date: 15-03-2019**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.5	
3	Specific Gravity	2.61	_
4	Bulk Density(Loose) (Kg/l)	1.4	_
5	Bulk Density(Compacted) (Kg/l)	1.44	_
6	Water Absorption(%)	0.25	_
7	Aggregate crushing Value(%)	22.2	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	23.5	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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A. Executive Engineer
Project Division
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Bangalore

R KARTHIK RECHAN
Authorized Signature
Quality Manager

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Format No: CP/TF/01

TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2019-07-06-24** **Date: 15-03-2019**

Customer : Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.

Address : Project Sub Division, BBMP, Bangalore.

Project Name : Improvements to General Public Toilets and Septage Maintenance in Ward No.03.

Agency : Sri.S.Somashekar, #90, New, No.441/15, Allasandra, GKVK Layout, Bangalore-560065.

Customer's Reference : EE(Project)/Ynk Zone/WO/107/18-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 13-03-2019

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 13-03-2019

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	18	18	1.8	98.2	90-100	90-100	90-100	95-100
3	2.36 mm	41	59	5.9	94.1	60-95	75-100	85-100	95-100
4	1.18 mm	229	288	28.8	71.2	30-70	55-90	75-100	90-100
5	600 micron	190	478	47.8	52.2	15-34	35-59	60-79	80-100
6	300 micron	229	707	70.7	29.3	5-20	8-30	12-40	15-50
7	150 micron	200	907	90.7	9.3	0-10	0-10	0-10	0-15
8	Pan	93	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2019-07-06-24** **Date: 15-03-2019**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.51	_
2	Specific Gravity	2.53	_
3	Material finer than 75 micron(%)	6.8	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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Quality Manager

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Format No: CP/TF/01

TEST REPORT OF PHYSICAL REQUIREMENTS OF BRICKS

Lab ID	:	**CP-2019-07-06-24** **Date: 25-03-2019**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilets and Septage Maintenance in Ward No.03.
Agency	:	Sri.S.Somashekar, #90, New, No.441/15, Allasandra, GKVK Layout, Bangalore-560065.
Customer's Reference	:	EE(Project)/Ynk Zone/WO/107/18-19
Source of sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-03-2019
Identification Mark on Brick	:	Wire Cut Brick
Reference to BIS codes	:	IS 1077 : 1992(RA 2011) Common Burnt Clay Building Bricks-Specification IS 3495 (Part 1 to 3) : 1992(RA 2011) Method of Tests Burnt Clay Building Bricks Part 1:Determination of Compressive Strength, (Cl 4.2.3) Part 2:Determination of Water Absorption,(Cl 4.1.3) Part 3: Determination of Efflorescence, (Cl 4)
Date of test	:	18-03-2019

COMPRESSIVE STRENGTH

Sl.No.	Length (mm)	Breadth (mm)	Area (mm^2)	Failure Load (KN)	Compressive strength of individual bricks (N/mm^2)	Acceptablity as per IS 1077:1992, Clause 7.1
1	228.13	109.98	25090	206.7	8.2	The bricks shall have a minimum average compressive strength for various classes as given in Table 1 of IS 1077: 1992. The compressive strength of any individual bricks shall not fall below the minimum compressive strength specified for the corresponding class of brick by more than 15%.
2	228.98	108.62	24872	197.6	7.9	
3	231.01	107.99	24947	201.3	8.1	
4	230.11	107.54	24746	199.5	8.1	
5	228.16	106.98	24409	194.6	8.0	
Average of 5 bricks					**8.1**	

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Lab ID : **CP-2019-07-06-24** **Date: 25-03-2019**

WATER ABSORPTION:

Sl.No.	Dry Weight	Wet Weight	Water Absorption(%)	Acceptablity as per IS 1077:1992, Clause 7.2
1	2.975	3.265	9.7	The water Absorption of bricks shall not be more than 20% by weight upto class 12.5 and 15% by weight for higher classes.
2	2.868	3.176	10.7	
3	2.906	3.196	10.0	
4	2.976	3.275	10.0	
5	2.875	3.218	11.9	
Average Water Absorption(%)			**10.5**	

EFFLORESCENCE:

Sl.No.	Length (mm)	Breadth (mm)	Area (mm^2)	Efflorescence	Acceptablity as per IS 1077:1992, Clause 7.3
1	229.18	108.98	24976	Slight	The efflorescence shall not be more than 'moderate" upto class 12.5 and "slight" for higer classes.
2	228.98	109.18	25000	Moderate	
3	228.18	108.39	24732	Slight	
4	230.19	107.98	24856	Moderate	
5	228.13	109.19	24910	Slight	

DIMENSIONS AND TOLERANCES

Sl.No.	Dimensions obtained for 20 bricks(mm)		Acceptability as per IS 1077:1992, Clause 6.2(b)
1	Length	4610	4520 to 4680 mm
2	Width	2185	2160 to 2240 mm
3	Height	1390	1360 to 1440 mm

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